

Amendment and Response
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Amendments to the Claims:

Please amend the claims to read as follows:

1. 1. (currently amended) A system comprising:
 2. a charge-emission device having an emitter; and
 3. a controllable current source electrically connected to the emitter of the charge-emission device by an electrical path, the controllable current source supplying to the emitter of the charge-emission device over the electrical path a controlled amount of electrical current that produces a potential difference at the emitter with respect to an electrode to induce the emitter to emit electrical charge; and
 8. a current sink connected to the controllable current source for shunting at least a portion of the electrical current to ground upon a detection of a particular charge emission condition.
1. 2. (canceled)
1. 3. (currently amended) The system of claim 21, further comprising protection circuitry for detecting the particular charge emission condition and for activating the current sink upon the detection.
1. 4. (currently amended) The system of claim 21, wherein the particular charge emission condition is indicative of an excessive flow of current from the emitter.

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- 1 5. (currently amended) The system of claim 21, wherein the particular charge emission
- 2 condition is indicative of an excessive rate of change of the current flowing from the
- 3 emitter.
- 1 6. (original) The system of claim 1, wherein the current source is adjustable to enable
- 2 changes to an amount of electrical current being supplied by the controllable current
- 3 source to the emitter.
- 1 7. (original) The system of claim 1, further comprising a controller directing the
- 2 controllable current source to provide a predetermined amount of electrical current.
- 1 8. (original) The system of claim 1, wherein the charge-emission device is a device that
- 2 emits ions.
- 1 9. (original) The system of claim 8, wherein the emitted ions have a positive charge.
- 1 10. (original) The system of claim 1, wherein the charge-emission device is a device that
- 2 emits electrons.
- 1 11. (original) The system of claim 1, wherein the charge-emission device emits fluid.
- 1 12. (original) The system of claim 1, wherein the charge-emission device is a gated
- 2 device.

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- 1 13. (original) The system of claim 1, wherein the charge-emission device has an array of
- 2 emitters including the emitter and a second emitter, and the controllable current source
- 3 provides current to each emitter in the emitter array.

- 1 14. (original) The system of claim 1, wherein the controllable current source is a first
- 2 current source, the charge-emission device has an array of emitters including a first
- 3 emitter and a second emitter, and further comprising a second controllable current source,
- 4 the first current source supplying a first controlled amount of electrical current to the first
- 5 emitter and the second current source supplying a second controlled amount of current to
- 6 the second emitter.

- 1 15. (currently amended) A system comprising:
 - 2 a micro-fabricated charge-emission device having an emitter; and
 - 3 controllable means for supplying to the emitter of the charge-emission device a
 - 4 controlled amount of electrical current that produces a potential difference at the emitter
 - 5 with respect to an electrode to induce the emitter to emit electrical charge; and
 - 6 means for shunting at least a portion of the supplied electrical current to ground
 - 7 upon a detection of a particular condition.

- 1 16. (original) The system of claim 15, further comprising means for signaling the
- 2 supplying means to supply the controlled amount of electrical current.

- 1 17. (original) The system of claim 15, further comprising means for adjusting the
- 2 controlled amount of electrical current supplied to the emitter.

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1 18. (canceled)

1 19. (original) The system of claim 15, further comprising means for detecting a
2 particular charge emission condition.

1 20. (currently amended) A method of controlling an amount of charge emitted by a charge-
2 emission device, the method comprising:

3 supplying a controlled amount of current from a controllable current source to an
4 emitter of a charge-emission device over an electrical path; and

5 emitting charge from the emitter of the charge-emission device in response to the
6 current received from the controllable current source; and

7 shunting the current supplied by the controlled current source to ground upon a
8 detection of a particular charge emission condition.

1 21. (original) The method of claim 20, further comprising adjusting the amount of
2 electrical current supplied to the emitter by the controlled current source.

1 22. (canceled).

1 23. (currently amended) The method of claim 20, further comprising wherein shunting the
2 supplied current ~~in response to~~ includes detecting an excessive rate of change in an
3 amount of charge being emitted by the emitter.

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1 24. (currently amended) The method of claim 20, further comprising wherein shunting the
2 supplied electrical current in response to includes detecting an excessive amount of
3 charge being emitted by the emitter.

1 25. (new) A system comprising:

2 a charge-emission device having an emitter and a gate electrode; and

3 a controllable current source electrically connected to the emitter of the charge-

4 emission device by an electrical path over which the controllable current source supplies
5 a controlled amount of electrical current to the emitter, the supplied amount of electrical
6 current producing a voltage difference between the emitter and the gate electrode of a
7 magnitude sufficient to cause the emitter to emit electrical charge without having to use a
8 voltage supply to apply a voltage bias to the gate electrode in order to achieve the voltage
9 difference that causes emission of the electrical charge.

1 26. (new) The system of claim 25, wherein the charge-emission device is micro-fabricated
2 and the gate electrode is integrated with the emitter in a micro-fabricated structure.

1 27. (new) The system of claim 25, further comprising means for signaling the current source
2 to supply the controlled amount of electrical current.

1 28. (new) The system of claim 25, further comprising means for adjusting the controlled
2 amount of electrical current supplied to the emitter.

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- 1 29. (new) The system of claim 25, further comprising a current sink connected to the
- 2 controllable current source for shunting at least a portion of the electrical current to
- 3 ground upon a detection of a particular charge emission condition.
- 1 30. (new) The system of claim 29, further comprising protection circuitry for detecting the
- 2 particular charge emission condition and for activating the current sink upon the
- 3 detection.
- 1 31. (new) The system of claim 29, wherein the particular charge emission condition is
- 2 indicative of an excessive flow of current from the emitter.
- 1 32. (new) The system of claim 25, wherein the charge-emission device has an array of
- 2 emitters including the emitter and a second emitter, and the controllable current source
- 3 provides current to each emitter in the emitter array.
- 1 33. (new) The system of claim 25, wherein the controllable current source is a first current
- 2 source, the charge-emission device has an array of emitters including a first emitter and a
- 3 second emitter, and further comprising a second controllable current source, the first
- 4 current source supplying a first controlled amount of electrical current to the first emitter
- 5 and the second current source supplying a second controlled amount of current to the
- 6 second emitter.

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- 1 34. (new) A method of controlling an amount of charge emitted by a charge-emission device
- 2 having an emitter and a gate electrode, the method comprising:
 - 3 supplying a controlled amount of current from a controllable current source to the
 - 4 emitter of the charge-emission device over an electrical path; and
 - 5 producing, by the controlled amount of current, a voltage difference between the
 - 6 emitter and the gate electrode of a magnitude sufficient to cause the emitter to emit
 - 7 electrical charge without having to use a voltage supply to apply a voltage bias to the gate
 - 8 electrode in order to achieve the voltage difference that causes emission of the electrical
 - 9 charge.
- 1 35. (new) The method of claim 34, further comprising adjusting the amount of electrical
- 2 current supplied to the emitter by the controlled current source.
- 1 36. (new). The method of claim 34, further comprising shunting the current supplied by the
- 2 controlled current source to ground upon a detection of a particular charge emission
- 3 condition.
- 1 37. (new) The method of claim 36, wherein shunting the supplied current includes detecting
- 2 an excessive rate of change in an amount of charge being emitted by the emitter.
- 1 38. (new) The method of claim 36, wherein shunting the supplied electrical current includes
- 2 detecting an excessive amount of charge being emitted by the emitter.